

FILEID**LABIOPEEK

D 12

LAB

I
g

²³C

N

24

G

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R

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D

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G

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51

LL AAAAAA BBBBBBBB I||||| 000000 PPPPPPPP EEEEEEEE AAAAAA KK
LL AAAAAA BBBBBBBB I||||| 000000 PPPPPP PP EEE EEE AA AA KK KK
LL AA AA BB BB II 00 00 PP PP PP EEE EEE AA AA KK KK
LL AA AA BB BB II 00 00 PP PP PP EEE EEE AA AA KK KK
LL AA AA BB BB II 00 00 PP PP PP EEE EEE AA AA KK KK
LL AA AA BBBBBBBB II 00 00 PPPPPP PPP EEE EEE AA AA KKKKKK
LL AA AA BBBBBBBB II 00 00 PPPPPP PPP EEE EEE AA AA KKKKKK
LL AAAAAAAAAA BB BB II 00 00 PP EE AAAAAAAA KK KK
LL AAAAAAAAAA BB BB II 00 00 PP EE AAAAAAAA KK KK
LL AA AA BB BB II 00 00 PP EE AA AA KK KK
LL AA AA BB BB II 00 00 PP EE AA AA KK KK
LLLLLLLLLL AA AA BBBBBBBB I||||| 000000 PP EEEEEEEE AA AA KK KK
LLLLLLLLLL AA AA BBBBBBBB I||||| 000000 PP EEEEEEEE AA AA KK KK
....

FFFFFFF 000000 RRRRRRRR
FFFFFFF 000000 RRRRRRRR
FF 00 00 RR RR
FFFFFFF 00 00 RRRRRRRR
FFFFFFF 00 00 RRRRRRRR
FF 00 00 RR RR
FF 000000 RR RR
FF 000000 RR RR

File: LABIOPEAK.FOR
Version 'V04-000'

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Program LABIO_PEAK
This routine continuously samples channel #1 search for peaks.
The sample rate is 1/TIC. It reports the PEAK height and position
to logical channel 'LABIO_PEAK_DATA'

Include 'LABCHNDEF.FOR'

Parameter MBX_NAME = 'LABIO_PEAK'
Character*130 RETURN
Character*15 COMMAND
Character*24 DATE TIME
Logical*4 SUCCESS,SYSSCREMBX

Parameter AD_CHANNEL = 1 : Channel Number
Parameter AD_RATE = 1 : Rate
Parameter AD_BUF_SIZE = \$12 : Buffer Size

Parameter MAX_PEAKS = 10
Integer*4 ITABLE(10),INLAST,INPTR,OUTPUT(2,MAX_PEAKS),IDIMO,NPEAKS
Integer*2 INPUT(AD_BUF_SIZE*2)

Data ITABLE/10*0/
Data INLAST,INPTR,IDIMO,NPEAKS/0,0,MAX_PEAKS,0/

Map To the Global Data Base and the event flags

Call LABIO_INIT()

Open Mailbox to LABIO_CONNECT

LAB
500
600
700
800
900
!CE

```
: Open ( Unit = 1, Name = 'LABIO_CONNECT' , Type = 'OLD' )
Create Mailbox for response from LABIO_CONNECT
SUCCESS = SY$CREMBX(,MBX CHANNEL,%Val('FD00'x),MBX NAME)
If (.not. SUCCESS ) Call FATAL_ERROR( SUCCESS, 'CREATING MAILBOX')

Open via FORTRAN
Open ( Unit = 2, Name = MBX_NAME, Type = 'OLD' )
Deassign the channel assigned when we created it
Call SY$DASSGN( %Val(MBX_CHANNEL) )

Open A Data File
Open( Unit = 3, Name = 'LABIO_PEAK_DATA' ,Type = 'NEW' )

Connect to the LABIO system
COMMAND = 'CONNECT'
Write(1,100) COMMAND,MBX_NAME

Wait for Response from LABIO system
Read(2,200) RETURN_CODE,RETURN
If( RETURN_CODE .ne. 0 ) Go To 99      !Failed to connect!

Allocate Channel AD_CHANNEL
Rate = AD_RATE
Buffer size = AD_BUF_SIZE

COMMAND = 'ALLOCATE'
Write(1,400) COMMAND,AD_CHANNEL,AD_RATE,AD_BUF_SIZE,0
Read(2,200) RETURN_CODE,RETURN
If( RETURN_CODE .ne. 0 ) Go To 99      !Failed to allocate!

Enable data acquisition by setting event flag ACTIVITY and NOTIFY
Call SY$SETEF(%Val(EF_ACTIVITY OFF+AD CHANNEL))
Call SY$SETEF(%Val(EF_NOTIFY_OFF+AD CHANNEL))

Now, wait for buffer to be filled, event flag STATUS will be set
when data are ready
5   Call SY$WAITFR( %Val(EF_STATUS_OFF+AD CHANNEL) )

Buffer is filled, get the buffer index
INDEX = AD_BLOCK(7,AD CHANNEL)

Move data from data buffer to peak processing buffer
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10  Do 10 I = 1, AD_BUF_SIZE
    INPUT(I+INLAST) = DATA_BUFFER(I,INDEX,AD_CHANNEL)
    INLAST = INLAST + AD_BUF_SIZE
! Clear the STATUS event flag and notify the I/O process
! Call SYSSCLREF( %Val(EF_STATUS_OFF+AD_CHANNEL) )
!(DEBUG) only
    Write(3,600) (DATA_BUFFER(I,INDEX,AD_CHANNEL),I=1,AD_BUF_SIZE)
! Call the peak processing routine
15  Call PEAK(ITABLE,INPUT,INLAST,INPTR,OUTPUT,MAX_PEAKS,NPEAKS)
! Report the peak info
    PEAK_SWITCH = NPEAKS          !Remember the peak switch
    If( NPEAKS .ne. 0 ) Then      !We have some peaks
        If( NPEAKS .lt. 0 ) NPEAKS = MAX_PEAKS !WE have the max
        Do 20 I = 1, NPEAKS
            TOTAL_PEAKS = TOTAL_PEAKS + 1 !One more
        Write(3,500) TOTAL_PEAKS,(OUTPUT(J,I), J = 1,2)
20  End If
    NPEAKS = 0                  !Reset the pointer
    If( PEAK_SWITCH .lt. 0 ) Go To 15 !More peaks to find
! Move any unprocessed data to the beginning of the input array
    If ( (INPTR .gt. 0) .and. (INPTR .lt. INLAST) ) Then
30  Do 30 I = 1, INLAST-INPTR
        INPUT(I) = INPUT( INPTR+I )   !Move the data
        INLAST = I                   !Last element stored
    Else
        INLAST = 0
    End If
    INPTR = 0                    !Last element processed
! Go wait for more data
    Go To 5
! All done, call the exit routine
99  Call EXIT(1)              !Exit
100 Format(' ',A,A)
200 Format(I2,A)
400 Format(' ',A,4I)
500 Format(3I10)
600 Format(15)
End
![End of File]
```

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VAX/VMS V4.0

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